



6BQ7

*obsolete*

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**MEDIUM-MU TWIN TRIODE**LOW-NOISE 9-PIN MINIATURE TYPE  
For Driven Grounded-Grid Circuits**GENERAL DATA****Electrical:**

Heater, for Unipotential Cathodes:

Voltage. . . . . 6.3 . . . . . ac or dc volts

Current. . . . . 0.4 . . . . . amp

Direct Interelectrode Capacitances (According to RTMA Standard  
ET-109-A with external shield No.315):

	Unit No. 1	Unit No. 2	
Grid to Plate. . . . .	1.15	1.15	$\mu\text{f}$
Input. . . . .	2.85	—	$\mu\text{f}$
Input (Grounded Grid). . . . .	—	4.95	$\mu\text{f}$
Output . . . . .	1.35	—	$\mu\text{f}$
Output (Grounded Grid) . . . . .	—	2.27	$\mu\text{f}$
Plate to Cathode . . . . .	0.15 max.	0.15 max.	$\mu\text{f}$
Heater to Cathode. . . . .	2.20	2.30	$\mu\text{f}$
Plate of Unit No.1 to Plate of Unit No.2 . . . . .		0.010 max.	$\mu\text{f}$
Plate of Unit No.2 to Plate & Grid of Unit No.1. . . . .		0.024 max.	$\mu\text{f}$

**Characteristics, Amplifier Class A:**

Plate Voltage. . . . .	150	volts
Cathode-Bias Resistor. . . . .	220	ohms
Amplification Factor . . . . .	35	
Plate Resistance . . . . .	5800	ohms
Transconductance . . . . .	6000	$\mu\text{mhos}$
Plate Current. . . . .	9	ma
Grid Volts (Approx.) for plate current of 10 $\mu\text{amp}$ . . . . .	-10	volts

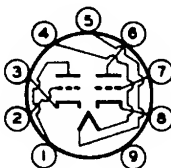
**Mechanical:**

Mounting Position. . . . .	Any
Maximum Overall Length . . . . .	2-3/16"
Maximum Seated Length. . . . .	1-15/16"
Maximum Diameter . . . . .	7/8"
Bulb . . . . .	T-6-1/2
Base . . . . .	Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW . . . . .	9AJ

Pin 1-Plate of  
Triode No.2Pin 2-Grid of  
Triode No.2Pin 3-Cathode of  
Triode No.2

Pin 4-Heater

Pin 5-Heater

Pin 6-Plate of  
Triode No.1Pin 7-Grid of  
Triode No.1Pin 8-Cathode of  
Triode No.1Pin 9-Internal  
Shield

MAY 1, 1951

TUBE DEPARTMENT  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

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## MEDIUM-MU TWIN TRIODE

## AMPLIFIER - Class A

Values are for Each Unit

## Maximum Ratings, Design-Center Values:

PLATE VOLTAGE. . . . .	250 <sup>▲</sup>	max.	volts
PLATE DISSIPATION. . . . .	2	max.	watts
CATHODE CURRENT. . . . .	20	max.	ma
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode .	200 <sup>▲</sup>	max.	volts
Heater positive with respect to cathode.	200	max.	volts

## Typical Operation in Push-Pull Grounded-Grid Circuit:

Values are for Each Unit

Plate Voltage. . . . .	150	volts
Grid Voltage*. . . . .	-2	volts
Cathode Resistor (Common to both units). .	100	ohms
Plate Current. . . . .	10	ma

## Typical Operation in Grounded-Grid Circuit

with Direct-Coupled Drive:

Unit No. 1 (driver tube) is directly coupled to Unit No. 2  
(driven grounded-grid amplifier tube) as  
shown in accompanying circuit

	Unit No. 1	Unit No. 2	
Plate Supply Voltage . . . . .	250	250	volts
Plate Voltage. . . . .	135	115	volts
Grid Voltage . . . . .	-1	-	volt
Grid Resistor. . . . .	-	0.5	megohm
Plate Current. . . . .	10	10	ma
Grid Current . . . . .	0	0	ma
Grid Voltage (Approx.) for plate current of 10 $\mu$ amp . .	-14	-	volts
Peak Heater-Cathode Voltage:			
Heater negative with respect to cathode . . . .	1	250	volts

## Maximum Circuit Values (Each Unit):

Grid-Circuit Resistance. . . .	0.5 max.	megohm
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\* obtained from cathode resistor.

<sup>▲</sup> under cutoff conditions, in grounded-grid circuits with direct-coupled drive, it is permissible for this voltage to be as high as 300 volts.

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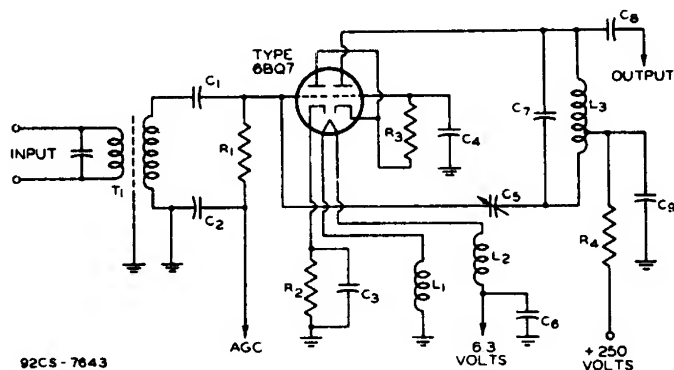


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## MEDIUM-MU TWIN TRIODE

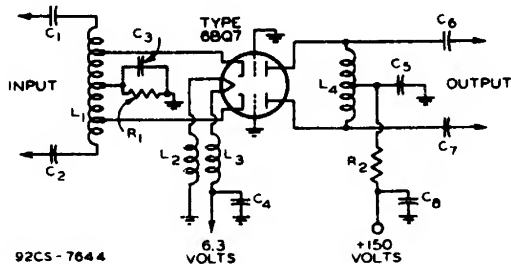
RCA-6BQ7 in Driven Grounded-Grid Amplifier  
Circuit with Direct-Coupled Drive.



C1: 33  $\mu\text{f}$ , 400 volts  
C2: 1000  $\mu\text{f}$ , 400 volts  
C3: 1000  $\mu\text{f}$ , 400 volts  
C4: 1000  $\mu\text{f}$ , 400 volts  
C5: 0.5 to 1.5  $\mu\text{f}$ , 400 volts  
C6: 1000  $\mu\text{f}$ , 400 volts  
C7: 2  $\mu\text{f}$ , 400 volts  
C8: 33  $\mu\text{f}$ , 400 volts  
C9: 1000  $\mu\text{f}$ , 400 volts  
R1: 10000 ohms, 0.5 watt  
R2: 100 ohms, 0.5 watt  
R3: 500000 ohms, 0.5 watt  
R4: 100 ohms, 0.5 watt

L1, L2: Bifilar chokes, each  
10 turns No.18 enamel  
wire, 1/4" coil form  
L3: Tuned circuit element of  
tuner. Value depends on  
distributed circuit capaci-  
tances. To determine tap  
point, tap down to 80 to  
90% of total number of turns  
T1: Tuned circuit element  
of tuner. Value de-  
pends on distributed  
circuit capacitances.

RCA-6BQ7 in Push-Pull Grounded-Grid Circuit.



C1 C2 C3 C4 C5:  
1000  $\mu\text{f}$ , 400 volts  
C6 C7: 100  $\mu\text{f}$ , 400 volts  
C8: 1000  $\mu\text{f}$ , 400 volts  
R1 R2: 100 ohms, 0.5 watt

L1 L4: Tuned circuit elements of tuner.  
Values depend on distributed circuit  
capacitances.  
L2 L3: Bifilar chokes, each 10 turns of  
No.18 enamel wire, 1/4" coil form.

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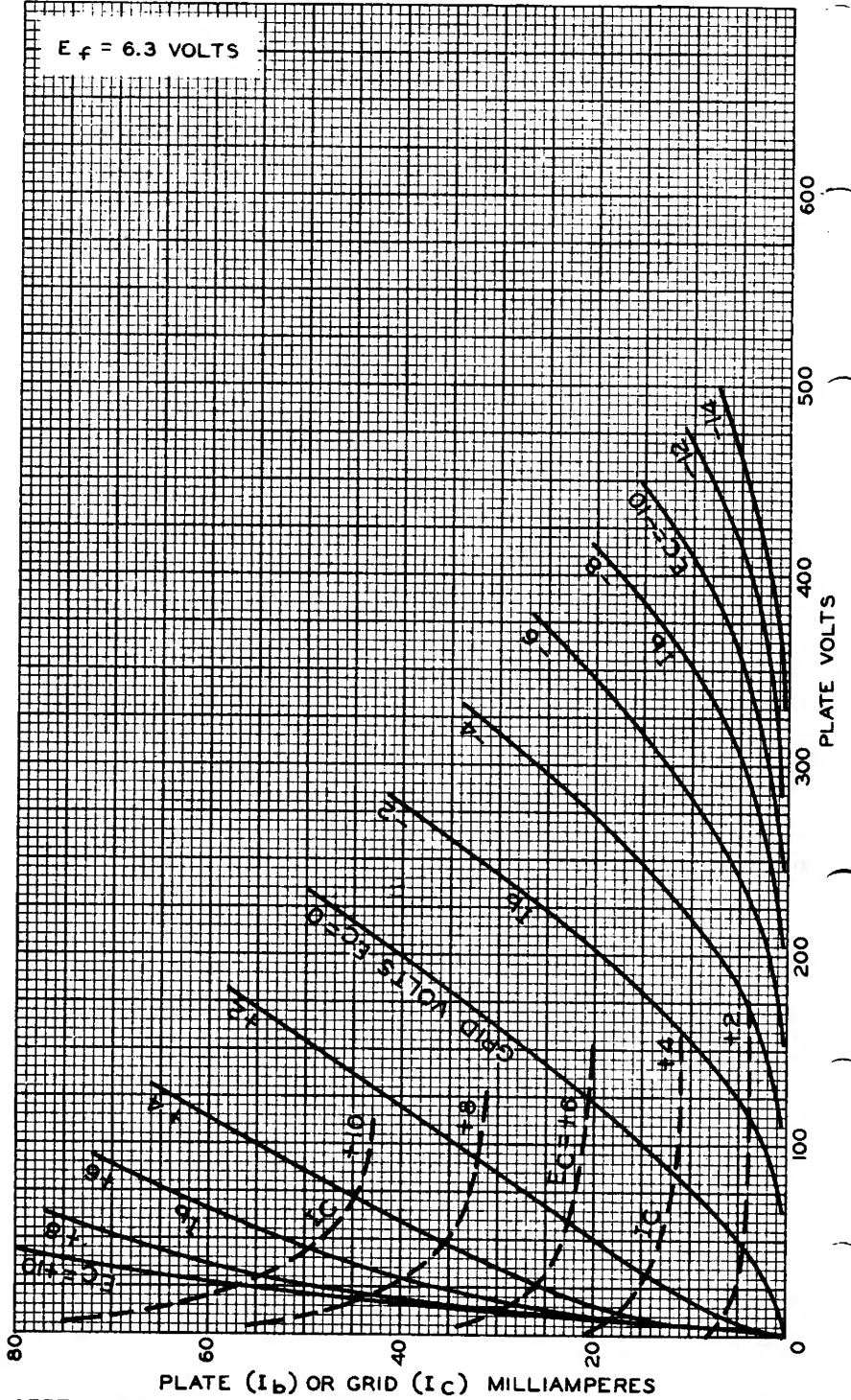
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# AVERAGE PLATE CHARACTERISTICS FOR EACH UNIT



SEPT. 6, 1950

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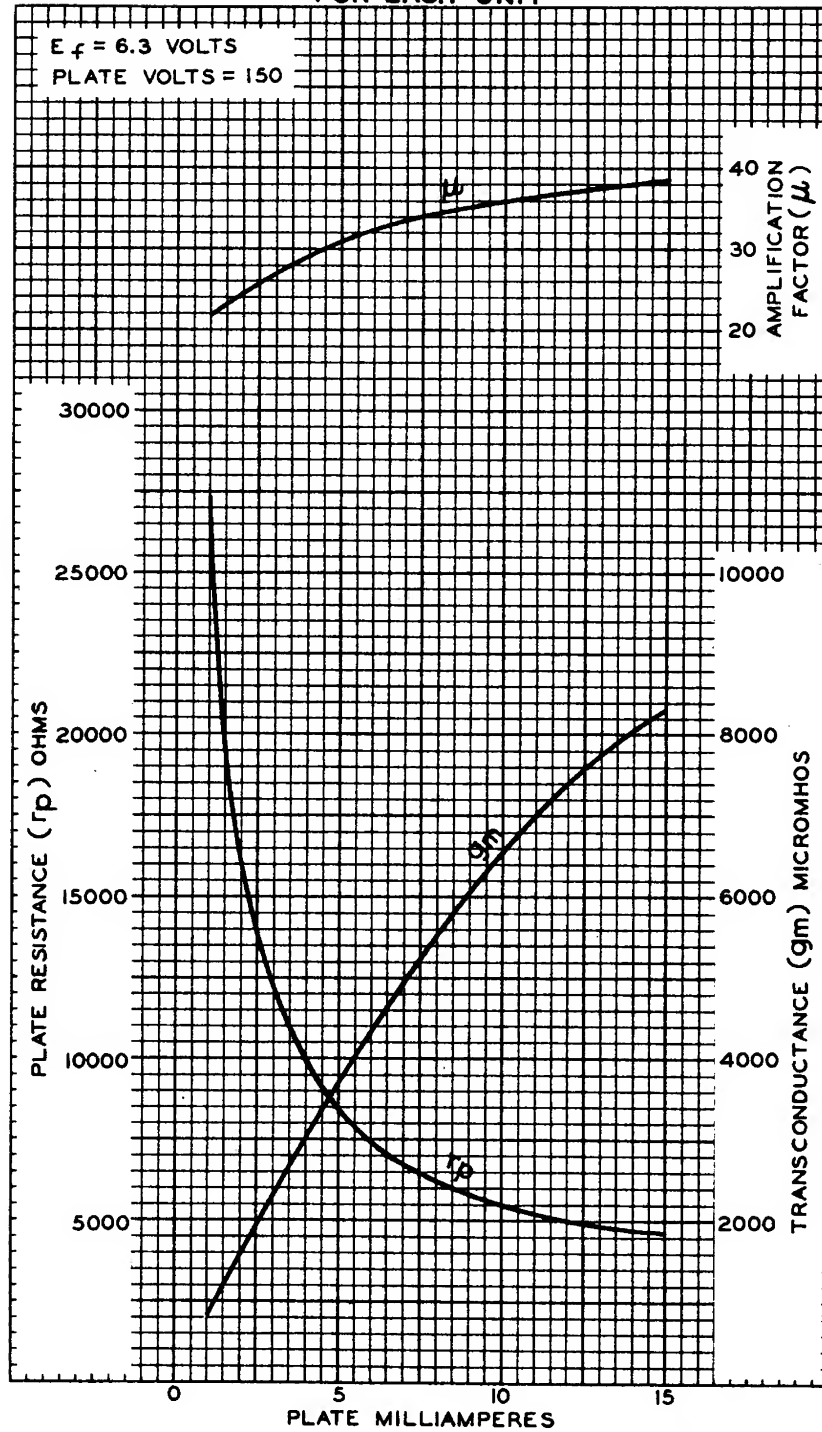
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# AVERAGE CHARACTERISTICS FOR EACH UNIT



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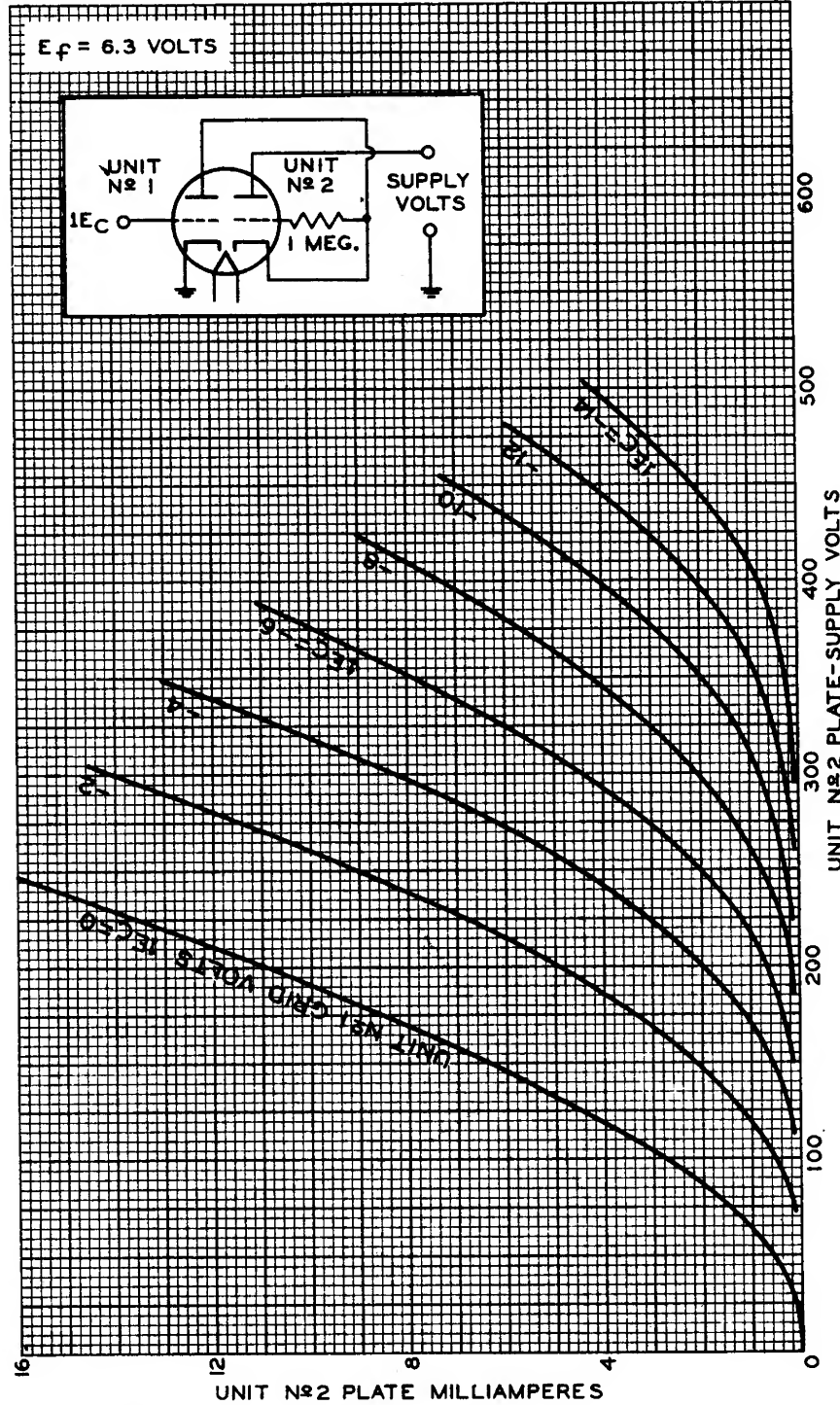
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AVERAGE PLATE CHARACTERISTICS  
AS DIRECT-COUPLED DRIVEN GROUND-GRID AMPLIFIER



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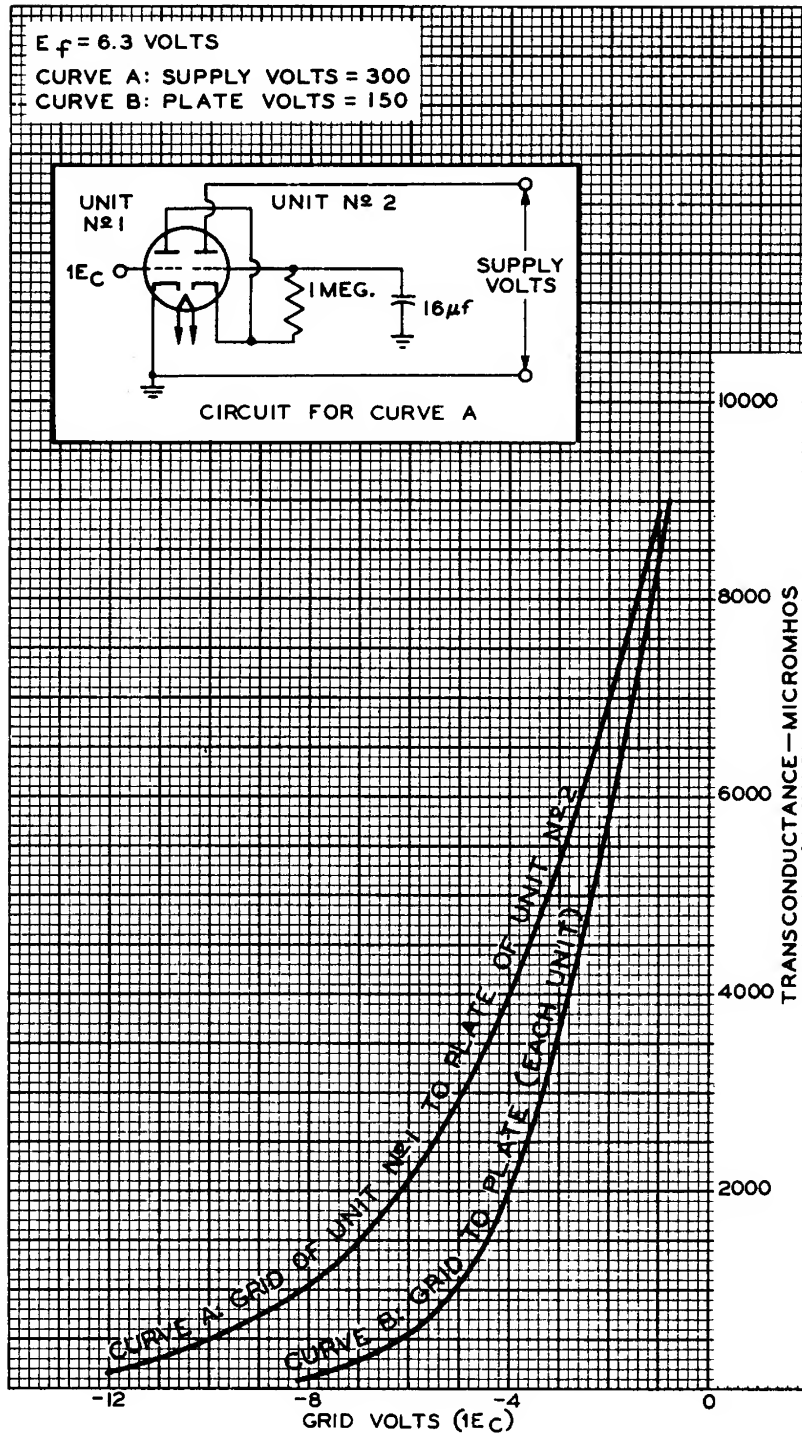
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### AVERAGE CHARACTERISTICS



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